

CLAIMS:

1. An actuator, comprising:
an outer housing;
a fluid muscle mounted within said outer housing, defining an annulus between said fluid muscle and said outer housing, said fluid muscle having a first end and a second end retractable relative to said first end;
fluid supply means connected for separately pressurizing said fluid muscle and said annulus to a pressure above ambient pressure, whereby said fluid muscle can be caused to contract to produce actuation movement of said second end by releasing pressure from said annulus.
2. An actuator as recited in claim 1, wherein said first end is clamped between an axially-oriented opening and a first end plug, and wherein said second end is clamped between an axially oriented opening in a piston and a second end plug, said piston being installed in said outer housing for axial movement in said outer housing.
3. An actuator as recited in claim 2, wherein said piston is sealed against an inner wall of said outer housing, to prevent fluid from escaping around said piston from said annulus.
4. An actuator as recited in claim 2, further comprising an end cap across a distal end of said outer housing, acting as a stop for said piston at a position corresponding to a maximum desired extension of the fluid muscle.
5. An actuator as recited in claim 3, further comprising an end cap across a distal end of said outer housing, acting as a stop for said piston at a position corresponding to a maximum desired extension of the fluid muscle.
6. An actuator as recited in claim 2, further comprising an output motion means connected to said piston.
7. An actuator as recited in claim 4, further comprising an output motion means connected to said piston.

8. An actuator as recited in claim 7, wherein said output motion means extends through an axially-oriented opening in said end cap.
9. An actuator as recited in claim 8, wherein said output motion means is a collet extension, arranged to open and close a collet.
10. An actuator as in claim 1, wherein said fluid is air.
11. An actuator as in claim 1, in combination with a collet, said actuator having an output means arranged to open and close said collet.